REMARKS

INTRODUCTION:

In accordance with the following, reconsideration of the allowability of the pending claims is respectfully requested.

Claims 23-25 and 35 have been allowed and claims 10, 12, 28, 33 and 34 have been indicated as including allowable subject matter.

Claims 1-35 are pending and under consideration.

REJECTION UNDER 35 USC 102

Claims 1-9, 11, 13-22, 26, 27 and 29-32 stand rejected under 35 USC § 102(e) as being anticipated by Maeda, U.S. Patent No. 6,272,085. This rejection is respectfully traversed.

First, it is noted that Maeda is not a proper § 102(e) reference. The § 102(e) date for Maeda is June 15, 1999, while the present application claims priority from a Korean application filed April 21, 1999. It appears the Examiner should have relied upon Maeda, PCT Publication WO-98/36414.

Regardless, the following brief comments regarding Maeda, and differences between embodiments of the present invention and the same, are respectfully submitted.

Independent claims particularly set forth that the claimed recording medium is an optical recording medium. Although these recitations may be in the preamble, the 'optical' requirement of the recording medium incorporates particular structural features into the remaining features set forth in the body of the claims.

As is clear from MPEP §2111.02, if functional features recited in the preamble give life to the claimed invention or if functional features in the body of the claim thereby limit the structure, then the claimed features must be given sufficient weight, searched, and addressed in any rejection of the claim. § 2173.05(g)

Thus, as the pending claims are directed toward optical recording media, and Maeda is directed toward hard disc drives, Maeda cannot disclose the presently claimed invention. Hard disc drives may include one or more platters, which are hard metal or ceramic disks coated with magnetic film, with magnetic read/write heads on articulated arms floating over the magnetic film as the platters spin. Conversely, the pending claims are directed toward optical recording media, which store data in a completely different manner, e.g., such that optical beams of light

reflected from an optical recording medium represent data stored on the optical recording medium.

In addition, Maeda is directed to solving a problem present in hard disc drives. In hard disc drives, when sequentially progressing through reading/writing data from/to a disc, when a defective area, previously known or unknown, is encountered the replacement data for that defective area is recorded in a separate location, while the remaining sequential data on the disc will continue to follow the defective area. However, this produces a problem in the need to physically move the magnetic reading/writing head to a different position in the same disc, or to stop reading/writing and access a separate position on a separate disc, to access a defect replacement area or to advance to the data area sequentially following the defective area.

Maeda solved this problem by using the addressing of each defective area and putting the replacement (spare) areas directly within the user data area at predetermined intervals. As illustrated in FIGS. 12B-12C, when defects are detected in area 105, the data to be recorded there is shifted to a preceding spare area 102. By preferentially shifting the recorded data, rather than pointing to a remote location for replacement of a defective area, it appears that Maeda can reduce the need to stop a reading operation of the disc, since the reading head won't need to move to remote locations, or the reading head won't have to stop the reading operation while another reading head for another disc, attempts to access the replaced data that would have been stored in the defective area.

To enable continued reading/writing of data from the disc, Maeda also has indicated that "dummy data" is recorded in the defective area so the head doesn't have to stop the operation and move to the next valid area after the defective area to begin, anew, recording thereafter.

It is noted again that Maeda is related to hard disc drives, and the problems associated therewith.

As explained in the present application, optical disc drives have previously solved a similar problem indicated in Maeda, regarding dispensing with the need to stop a reading/writing operation when sequentially traversing a data area, when there are defective areas within that data area. As noted above, Maeda solves this problem by shifting data within that data area to spare areas, allocated at predetermined intervals, and recording dummy data in the defective areas, thereby allowing a sequential reading/writing of data from/to that data area on the hard disc. The present application explains that it is conventional in optical disc recording to lower the power level of the writing head when recording data to an optical disc when traversing over a defective area. Therefore, the conventional optical disc recording operation does not suffer from

the aforementioned problems associated with hard discs needing a method of sequentially recording data to a data area without having to move the recording head to access data sequentially following a defective area.

By lowering the power level, while still sequentially traversing the data area, conventional optical disc drives do not need to move a recording/reading head to record/access data sequentially following a defective area.

Further, the problems solved in the present application are different from the problems encountered in hard discs.

As explained in the background of the present application, while applicable to all types of optical discs, embodiments of the present application solve a problem that may be resident in optical discs that do not currently have a mechanism for handling detected defects. Beginning on page 1, of the present application, conventionally only DVD-RAM optical discs include a method for detecting previously detected defective area, e.g., DVD-RAM optical discs have basic recording units that are discriminated from one another by physical identifiers or a buffer field. However, in DVD-RW optical discs, for example, basic recording units are seamlessly recorded without discrimination. The present application further explains, beginning at the bottom of page 4, that since data in DVD-RW optical discs is recorded seamlessly, without basic recording unit discrimination, when a data recording is interrupted it is difficult to accurately locate the point at which to restart recording. Further, as explained in the present application, conventionally a linking scheme was employed to indicate the start position of the next recordable area.

This problem in DVD-RW optical discs, only as an example, derives directly from the fact that data is seamlessly recorded on the optical disc without discrimination and that when a recording operation is interrupted it is difficult to locate the position to restart recording.

The operation of a hard disc drive is totally different from the operation of an optical drive. In hard discs, the location of each basic recording unit is known and mapped. Further, as Maeda explains, defective areas, their replacement areas, and the start position of the subsequent data, are fully mapped and known. Thus, when recording data to a hard disc, the problem associated with DVD-RW optical discs does not exist, as the start position of each basic recording unit is differentiated and if a recording operation were to be interrupted there would be no question as to the start position for the subsequent recording position.

Thus, hard discs similarly do not suffer from the same problem resident in optical discs that record basic recording units seamlessly without differentiation.

That being the case, the solutions presented in the present application are not the same as the solution presented in Maeda. That is, in Maeda, it was determined beneficial to record dummy data over defective areas so a recording operation could continue without having to stop the recording head's sequential progression across a data area. Conversely, in an embodiment of the present application, where particular dummy data is recorded to a defective area, such recording of the particular dummy data is used to differentiate basic recording units in the seamlessly recorded data, i.e., a differentiation aspect is being added to the seamlessly recorded data, where such differentiation was not previously present. This differentiation is further evident in embodiments of the present application that record a wobble signal to act as the differentiation indication. Maeda does not need such differentiation as the start position of each basic recording unit is previously known, even for those start positions after a defective area.

Further, the solution in Maeda of storing dummy data in a defective area is not applicable to optical discs. In Maeda the recorded dummy data has no significance, it is only a place holder to enable a recording head the ability to continue recording, regardless of whether the areas being recorded to are defective areas or valid recordable areas. Conversely, in embodiments of the present application, the particular dummy data has significance, as it is recognizable. Recognition of the dummy data enables the location of the start position of the next recordable area. Thus, even the recording of dummy data between Maeda and the present application are fundamentally different.

In summary, although Maeda may set forth the recording of dummy data over a defective area, this recording of dummy data is only relevant to the operations of hard disc drives. The recording of dummy data over defective areas, as taught by Maeda, would not be applicable to optical recording operations, since the problems pertaining to each type of recording media are different. Further, the need of Maeda's solution is not resident in operations with optical discs, as the same problem is not relevant in optical discs, i.e., conventional systems already solve this problem. Thus, only the present application has set forth the problems with optical discs the presently claimed invention solves, i.e., only the present application could provide the motivation for modifying a conventional optical disc drive to perform the presently claimed invention. Lastly, as briefly noted above, some of the claims are directed toward recording wobble signals instead of recording dummy data over defective areas. As explained above, this wobble signal recording

provides a way to differentiate previously undifferentiated seamless recordings of basic recording units, just as the recording of particular dummy data or defective area data pattern, as recited in independent claim 1, noting that the claims are not limited thereto, with each claim having differing scope and breadth.

Therefore, for at least the above, it is respectfully submitted that Maeda fails to disclose all the presently claimed features of the independent claims, thereby similarly failing to disclose all the presently claimed features of their dependent claims. Similarly, as noted above, there would not have been motivation to modify either Maeda or a conventional optical disc recording unit to operate as claimed, as only the present application provides the need and support for the same.

REJECTION UNDER 35 USC 103

Claims 9 and 22 stand rejected under 35 USC § 103 as being obvious over Maeda, in view of Hisatomi et al., U.S. Patent No. 6,546,192. This rejection is respectfully traversed.

First, it is noted that Hisatomi et al. is not a proper 102 reference. The present application was filed April 21, 2000, while the earliest US priority date of Hisatomi et al. would appear to be July 31, 2000.

Second, the Office Action first relies on Maeda disclosing a majority of the claimed invention, while thereafter presenting remarks why it would have been obvious to modify Awad et al., presumably U.S. Patent No. 5,442,638, cited in Applicant's IDS filed December 21, 2000. It is presumed that since the Office Action relies on Maeda to disclose a majority of the claimed invention, the remarks pertaining to the obviousness of claims 9 and 22 were meant to reference Maeda.

Lastly, as noted above, it would not have been obvious to modify the hard disc drive solution of Maeda to an optical disc environment. In addition, only the present application provides support for modifying a conventional optical disc recording operation, as claimed, as only the present application has provided the rationale for such a modification. Further, the outstanding rejection merely indicates that Hisatomi et al. discloses a DVD-R, and that it would have been obvious to us a DVD-R disc "in order to improve [] recording [of] data in a different type of disc." However, although there may be multiple types of discs, a rejection must still include support indicating why it would have been obvious to implement the particular type of disc claimed. The fact that such discs exist is not sufficient motivation for implementing the claimed operation using the same.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 9/30/03

By: _____

Stephen T. Boughner
Registration No. 45,317

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501